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About TfL

On 3 July 2000, control of London's public transport passed to Transport for London (TfL), part of the Greater London Authority.

TfL is the body responsible for improving the capital's transport system. Its role is to implement the Mayor's Transport Strategy for London and manage transport services across the capital for which the Mayor has responsibility.

It is accountable for both the planning and delivery of transport services in London. This includes London Buses, the Docklands Light Railway (DLR), London Trams, London River Services (LRS), Victoria Coach Station (VCS) and London's Transport Museum as well as regulating taxis and the private hire trade, and managing the Transport for London Road Network (TLRN), a 580km network of London's main roads.

Now that London Underground has become part of TfL, for the first time in at least a generation, London has one strategic authority to plan and manage its main transport systems.

Focus On: London's Tube is one of a series of documents being produced by TfL on its key transport modes and responsibilities.

Focus on: London's Tube

Improving London's Underground

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MAYOR OF LONDON

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Foreword by Mayor, Ken Livingstone

I am delighted that London Underground is finally becoming part of Transport for London. The Tube, the backbone of the capital's transport system, will now be directly accountable to the city it serves.

London's transport system has suffered from a lack of investment for decades. Under central government control the system was starved of investment while London's population and employment boomed.

Since the return of democratic government to London we have started to reverse that decline. Investment in the bus network has increased rapidly, delivering better services and the biggest increase in passengers since the Second World War.

On the roads, London is leading the world in taking strong measures to tackle congestion in the centre of the city.

My first priorities for the Tube will be to improve safety, reliability and cleanliness. To deliver these improvements I have brought the best transport managers in the world to London. They will be working with the thousands of dedicated public servants in LU who have kept the Tube functioning in the most difficult circumstances. But they will face major challenges.

After years of under-investment, the performance of the Tube cannot be transformed overnight and any programme of new investment will inevitably cause some disruption while vital works are carried out.

The effective privatisation of maintenance under the Public Private Partnership (PPP) imposed by the Government will also make the management and improvement of the system more difficult.

That said, the Underground has been promised nearly £1 billion of investment each year for the next seven years. Bob Kiley, Tim O'Toole and I will do everything in our power to make sure that money is used wisely and effectively so that the Underground makes its full contribution to delivering the world class transport system to which this city is entitled.

Ken Livingstone,
Mayor of London

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Message from Bob Kiley

With the transfer of London Underground, TfL can finally begin the task envisaged when the Government agreed to devolve power to London – to provide a truly integrated approach to transport planning and management in this great city.

I came to London with my experience in renewing the Boston Metro and New York subway system, intending to deliver the best possible service for the capital – so I've been waiting for this moment since I arrived.

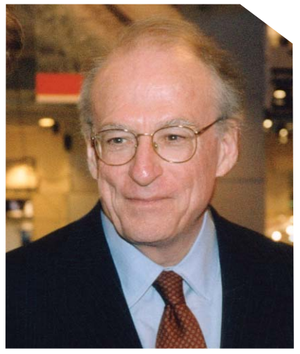
In the brief time since TfL's inception, we've worked hard towards renewing the quality and quantity of London's transport. This has included the successful introduction of the congestion charge and improvements to the bus service which have resulted in the highest levels of ridership since World War II.

Bringing the Underground on board presents us with an opportunity to take a more unified approach across all the modes of transport that are operated by TfL. As an example, we will be simplifying the fare structure and introducing world-class ticketing technology across London's transport system with the new Oyster Card. Overall, we will be able to allocate our limited resources more efficiently and effectively to respond to passenger needs.

However, there are two major hurdles that will significantly jeopardise our efforts to respond to the growing demands on our services.

I maintain that the Government's Public Private Partnership (PPP) is not the right way to manage the maintenance and renewal of the Tube. As they stand, the PPP contracts do not satisfactorily address the improvements to the Underground that TfL and the public demand. Nevertheless, we will do everything within our power to hold the infrastructure companies to account on those Tube improvements they have promised to deliver.

But no matter how effectively we work within the constraints of the PPP, we still face severe limitations on what we can achieve given our limited resources. We need to reverse the effects of decades of neglect on London's transport, as well as respond to the projected employment and population increase over the next decade – and this simply requires higher levels of investment than the funds we currently receive through fare revenues and Government grant. So far, however, the



Government has been unable to give us any assurances of further assistance.

As a consequence, TfL has taken an active role in investigating innovative mechanisms that allow us to generate funds from new sources. We will continue to work with the Mayor, the London Assembly, London's boroughs, business, passenger groups and the Government to press for these changes.

The transfer of London Underground is an overdue and important step. Despite the daunting nature of the task before us, we must continue to pursue our aim: to deliver palpable, long-term improvements to transport for all those who visit, live and work in London.

Bob Kiley

Commissioner
Transport for London

Introduction from Tim O'Toole

London Underground faces one of the most challenging periods in its 140 year history.

We must manage the renewal of the Underground through a complex, untried financial and operational structure, the PPP, while transporting upwards of three million people everyday through Greater London.

This challenge will be very difficult because of the potential for conflict, both in these goals and among the parties who must deliver this change.

The PPP is governed by some of the most complex and lengthy contracts ever devised for such a project. They divide the Underground into four parts, three companies to deliver maintenance and asset renewal and the Underground, which continues to provide service to the public. At the same time, the Underground is managing ambitious Private Finance Initiative (PFI) contracts with other private companies to supply improvements in power supply, communications, ticketing and other basic needs.

It will be a mammoth task simply to administer and coordinate these contracts.

Billions of pounds will go into the PPP, and London expects to see a much improved Tube as a result. The private companies involved, Metronet and Tube Lines, have promised substantial improvements in the coming years. As I assume the position of Managing Director of London Underground, I am determined to take them at their word and represent London to get the absolute maximum out of both the PPP and PFIs.

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This will require communication, coordination, discipline and honesty. We must communicate and freely exchange information to promote maximum efficiency and eliminate unpleasant surprises. We must coordinate our efforts to minimise the disruptions to Tube passengers caused by an investment and engineering programme of this size. We must be disciplined in our plans and performance to eliminate waste and delay. Finally, we must be honest about our progress every step of the way, so that we can learn from our mistakes and keep faith with our passengers and stakeholders.

At the same time, all the employees of London Underground, from management to front-line station and train staff, must face the change that this situation demands.

I have spent the last few months travelling the Underground, talking to the staff and passengers. I have watched station staff demonstrate the skill and care of a great conductor in safely guiding an impossible crowd through Camden Town Station. I have watched a station assistant carefully and kindly lead a blind person down to a platform and onto a train and watched another face anti-social behavior without flinching. I have been delayed on a train and listened to a driver's timely and light announcement that lifted tension and comforted passengers. Anyone would feel lucky to have such colleagues.

However, I have also watched willful inattention to people looking for help, endured delays with no announcements, both on platforms and trains, and listened to the complaints of disaffected employees and frontline management. I have been introduced to an organisation with some of the most sophisticated analytical tools to be found in the transport sector, yet so burdened with process that any progress is agonisingly slow.

If we at London Underground are to hold up our end of the bargain, we need a renaissance in our skills and efforts, a unity of purpose and a much more flexible organisation. We must accelerate decision-making, pursue a fresh start in industrial relations and improve the service we provide in every respect.

I am confident that we can respond to this challenge because the employees of the Underground have accomplished so much in the past with such little support. Indeed, the most remarkable feature of the Underground is its performance in the face of neglected investment. The Chancery Lane incident notwithstanding, the Underground has one of the most enviable safety records of any railway network and manages to get passengers to their destinations far more reliably than the UK's national rail network. I believe that once again morale and pride will provide the hidden leverage for better Tube performance.

It will be many years before the investment of the PPP fundamentally improves the Underground. Between now and then, the employees can make the crucial difference for London.

Management, the PPP and PFI companies, the Trade Unions and every individual employee must recognise that we are in this together and that together we must serve London.

Tim O'Toole

Managing Director,
London Underground

Focus on: London's Tube

London in the 21st Century is a city reasserting itself. London's population is set to reach eight million in 15 years and London continues to drive the nation's economy. Urban renewal is accelerating, new landmark buildings are enriching the skyline and the true importance of equality and diversity are becoming recognised in the growth of our city. The Mayor and the London Assembly have given London a new voice, and there is a new vision for the capital in the Mayor's London Plan and Transport Strategy.

London was the first world city and the first to boast an underground system. At the dawn of the 21st Century, London is still a world city, deserving nothing less than a world-class transport system to meet the needs and expectations of Londoners and those who work in and visit our city.

For the first time in many years, the Underground has the promise of long term, stable funding. The Underground is joining TfL at this historic juncture, and we have an opportunity of realising our vision. We want what our customers want, a transport system that is safe, reliable and clean. London expects the renewal of the Underground to result in a travel experience that starts with more accurate information to guide the journey, and includes simplified ticketing. It expects a more accessible system with faster and more frequent trips that are integrated with other transport modes.

This document is a statement of where we are today and the way forward. It presents the management changes around which we shall organise our efforts, the goals before us and the current schedule of improvements under the PPP contracts that we have inherited. Many of these improvements are not scheduled to be delivered as quickly as we would like, but if they are delivered as promised under the PPP, they will eventually result in a fundamentally more reliable and resilient Underground.

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A strong partner for London

The Underground must represent London in getting the best value out of the PPP investment plan while still providing transportation to three million passengers every day. In order to meet this challenge and pursue two goals that may conflict over the short term, we are adopting a new management structure.

The Managing Director, Tim O'Toole, has made two key appointments: the Chief Operating Officer, Mike Brown, who will oversee the everyday service challenge; and the Chief Programme Officer, Bob Janowski, who will oversee the contractual relationships with the private companies involved in the PPP and PFI's. In the following sections, we explain the PPP, set forth our priorities for the Underground's operations and outline the current schedule of improvements as set out in the PPP contracts.

What is the PPP?

London Underground's operating performance has suffered in recent years because its ageing infrastructure has struggled to cope with a substantial growth in passenger volumes. Throughout the 1990s, volume on the Underground increased by almost 20 per cent, yet basic renewal of the assets was neglected during this period and well before. In a bid to come to grips with this problem, the Government proposed and after a long period LU implemented, long term funding and management arrangements, called the PPP, that are intended to guarantee sufficient investment over the next 30 years.

The Mayor and TfL fought against the PPP and in favour of an alternative-funding plan. The Government's PPP plan prevailed and it will govern the management of the Underground going forward. However, no one should doubt TfL's commitment to make the PPP work in the interests of Londoners and all who use the Tube.

Under the PPP, London Underground will continue to run the system, employing the train and station staff that best serve the travelling public. The change presented by the PPP is that the Underground has entered into contracts with private companies for the rehabilitation and maintenance of most of the Underground's assets, including its track, tunnels, rolling stock, signal systems and stations. This arrangement was organised by dividing the Underground system into three groups of lines:

- SSL (Sub-surface lines): Circle, District, Metropolitan, Hammersmith & City and East London Line;
- BCV: Bakerloo, Central, Victoria and Waterloo & City;
- JNP: Jubilee, Northern and Piccadilly

The SSL and BCV lines were awarded to Metronet, a private sector consortium of Balfour Beatty, WS Atkins, Bombardier Transportation, Thames Water and Seeboard.

The JNP lines were awarded to Tube Lines, a private sector consortium of Bechtel, Jarvis and Amey.

How will the PPP work?

The PPP is a set of complex contracts that govern the maintenance and renewal of most of the Underground's assets. In exchange for a monthly fee - the Infrastructure Service Charge (ISC) - Metronet and Tube Lines have agreed to maintain the Underground's assets to standards set out in the PPP contracts. The Underground remains responsible for all engineering and safety standards.

The PPP contracts require certain work to be undertaken, such as station refurbishments and modernisations, according to a defined schedule. In addition, the contract states that the monthly fee, the ISC, may be increased or decreased based on certain performance measures that relate directly to customer experience.

For example, if trains are delayed because of signal failures, or litter or graffiti are not cleaned up, then Metronet or Tube Lines could receive a reduced payment. On the other hand, if their investment results in improved Underground performance such as more trains per hour, then the ISC might be increased.

What improvements will the PPP deliver, and when?

Metronet and Tube Lines have promised many improvements over the coming years. They expect to provide new trains, new signal systems and renewed stations. They promise to maintain existing assets so they perform more reliably, and Metronet and Tube Lines promise to keep the Underground free of litter and graffiti. Londoners will not see some of the more dynamic changes for many years. The improvement in the Underground's capacity to move more passengers, more comfortably, which is expected to be accomplished with new trains and new signal systems, will be increased progressively over the next 20 years.

Line	Completion date	Increase in capability
Central	2006	6%
Victoria	2006	5%
	2013	14%
Waterloo & City	2007	12%
Jubilee	2009	22%
Northern	2012	18%
Sub-surface (south)	2012	1%
	2015	2%
	2018	12%
Sub-surface (north)	2012	1%
	2014	17%
Piccadilly	2014	19%
Bakerloo	2020	17%

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These improvements will enable London Underground to run more trains and reduce waiting times. It is estimated that total network capacity could be increased by approximately 25 per cent, if the above goals are met.

In the early years of the PPP, the more noticeable changes should be evident as a result of the modernisation, refurbishment and maintenance of stations. All Underground stations are scheduled to be modernised or refurbished over the next ten years with the majority addressed within the first eight years. Refurbishment is more than simple cosmetic changes for most stations it involves:

- comprehensive CCTV and associated recording equipment
- help points
- high quality public address systems in all areas
- electronic information displays in ticket halls and on platforms
- providing available service and next train information
- certain features to aid accessibility
- improved seating and, at some locations, waiting areas.

Both refurbishments and modernisations provide the opportunity to complete major structural repairs and renewal of dilapidated external features such as facades, roofing canopies and glazing. In addition, station modernisations include renewal of floors, walls, doors, staircases and ceiling finishes, as well as fixtures and fittings, and electrical equipment and removal, where possible, of obstructions to movement through the station. All renovation will ensure that heritage features are respected, and particular care will be taken with listed buildings. To ensure high standards are maintained, once a station has been modernised or refurbished, it will receive further refurbishment every seven to eight years.

Londoners should also see early improvement in train reliability as a result of improved maintenance practices. Metronet (BCV & SSL), for example is predicting improvements in asset reliability in the order of 20 to 30 per cent over the first three years of the PPP. At the back of this document, we describe each line, some of its operating challenges, the dates for station and line upgrades and other projected improvements promised by Metronet and Tube Lines.

What are the PFI's?

Prior to the PPP, London Underground entered into PFI's to fund and build discrete asset improvements. Some of these remain as major initiatives that promise important future improvements, but represent additional complexity and risk to the management challenge. Three of the more significant PFI's address communication, power and ticketing.

Communication

Telephone and radio remain the principal media of communication used on the Underground, connecting signal cabins, depots, stations, trains, line controllers and field employees. These systems are at the end of their useful life and are becoming increasing unreliable. The Underground entered into a PFI with CityLink, a private sector consortium, to manage the existing communication system and build its replacement. The new system, which is known as Connect, is scheduled for completion in 2006, and it will provide dramatically better communications throughout the Underground, leading to improved services.

Power

After 95 years of supplying power for the Tube, London Underground decommissioned its Lots Road generating station and entered into a PFI with Seeboard Powerlink to meet its power needs over the next 30 years. This is an enormous management undertaking and one that will affect nearly every other major project. This PFI provides a source of power that is more reliable, efficient and clean.

Ticketing

The Underground has pioneered a number of innovations in ticketing over the years. It joined with London Buses in the Prestige PFI to maintain and enhance ticketing equipment throughout both systems. We have begun the latest revolution in this area with the launch of the Oyster Card, TfL's multi-modal smartcard. It is the same size as a credit card and contains a radio aerial and microchip that can store much more information than a magnetic stripe card. As a result, the Oyster Card can be used to store value and also recharged when its value is used up. Oyster Cards need only be swiped near the card reader, not fed into a ticketing machine, thereby speeding the passage through the ticketing gates. A lost or stolen card can be cancelled by a central computer, increasing security and making it easier to reclaim its value. This innovation, combined with our review of a simplified fares structure, promises a dramatically better ticketing service for passengers.

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Excellence in operations

TfL's vision is: 'To sustain London's place as a premier world city. TfL will be the world's leading transport authority, delivering safe, reliable and integrated transport to all those who live in, work in or visit London.'

We are determined to follow TfL's lead in meeting the basic requirements of our customers. Passengers want an Underground that is safe, reliable and clean. That simple formulation must be met, day-in day-out, all while overseeing an asset renewal programme, unprecedented in scale for the Underground.

Safety

Safety is and always will be the number one priority of London Underground. Actual operating performance must become ever safer, and the personal security of passengers and staff must be assured.

Over the past decade, the Underground has compiled a record of increasingly safe operations. The derailment on the Central line at Chancery Lane interrupted that performance and raised doubts among Tube passengers and stakeholders about the prospect of hidden risks in the Underground's operations. We shall address those concerns and confront issues raised in the PPP debate by engaging an outside safety expert to conduct a safety audit of our practices and procedures. The Underground retains overarching responsibilities for safety under the PPP contracts with extensive powers to set safety standards, approve or reject proposals and require the delivery of safety improvement programmes. Each of these areas will be reviewed to assure employees and passengers alike of the robustness of the Underground's safety programme.

A perception of personal security must accompany safe operations on the Underground.

Law enforcement statistics support the conclusion that the Tube is an extremely safe environment overall, yet many passengers perceive it otherwise. TfL and the Underground are working with the British Transport Police (BTP) to confront this perception and change it. More resources will be put into police manpower with the Mayor providing funding for up to 100 additional officers. This is over a 20 per cent increase in officers for the Underground. We have undertaken a strategic planning effort with the BTP to maximise the use of these additional resources and to ensure effective co-ordination between our organisations. This effort will build on previous successful BTP-Underground initiatives, such as Operation Farrow, which targeted pickpockets and Operation Rhino, which is currently addressing anti-social behaviour on the District line.

The PPP promises improvements in electronic security measures as part of the station improvement programme. Currently, almost all stations have CCTV, though the quality and comprehensiveness varies, and only 21 per cent of stations are equipped with Help Points. Over the next ten years, the PPP station enhancement programme is expected to provide a state of the art, comprehensive CCTV system in each station, Help Points in ticket halls and platforms, and station control rooms to enable staff to better monitor station security and assist customers more effectively. Across the network this will mean more than 9,000 latest generation CCTV cameras and 2,500 Help Points.

Reliability

Reliability is the number one concern of Underground passengers. After improvements through the 1990s, the reliability of the Underground's train performance hit a plateau. The causes of unreliability are asset failures, management focus, attendance problems, dwell and terminus delays, customer actions and congestion.

The reduction of asset failures promises to be one of the primary benefits of the PPP in the early years and that will be an important ingredient to improving reliability. The Underground has a number of initiatives underway to deal with non-asset related failures. One of the major reasons for the appointment of a Chief Operating Officer is to bring increased vigilance and accountability to these initiatives. We must improve attendance, manage train dispatch and dwell time, reduce run-time variations and improve efficiency at crew relief points.

The Underground's reliability suffers in comparison to other metros because of the difficulty it faces in recovering from a service disruption. There is relatively little physical redundancy, or slack, in the system especially in the deep tubes, so it is difficult to bypass unexpected problems. In addition, the state of the communications and information systems make it difficult for management to assemble the necessary information to plan and execute recovery quickly. The new communications systems promised by the PPP and PFI contractors for delivery over the next few years will remedy some of those shortcomings, thereby improving reliability overall.

Clean and welcome

At the most basic level, a clean service is a welcoming service. This is a continuing challenge for the Underground because of the growing prevalence of graffiti and litter on the system. Graffiti implies neglect and a loss of control. It is offensive and contributes to many passengers' feelings of unease. Tackling rubbish has been a growing problem ever

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since litter bins were removed from the system for security reasons. Sadly, some passengers have little regard for other passengers of the Tube and wantonly deposit papers, cans, bottles and food containers on the Underground. Every day, 15 tons of rubbish must be removed from the Underground.

The PPP contracts contain incentives for Metronet and Tube Lines to quickly remove graffiti and litter and improve the overall look and feel of the system. We intend to join with them to address these problems in partnership. We shall continue to experiment with used ticket bins and security safe receptacles. We are joining with BTP, Metronet and Tube Lines for the removal of graffiti from the system. This is a programme that will take time and dogged persistence, but we are determined to reclaim control of the Underground's property from those who litter and deface the Tube.

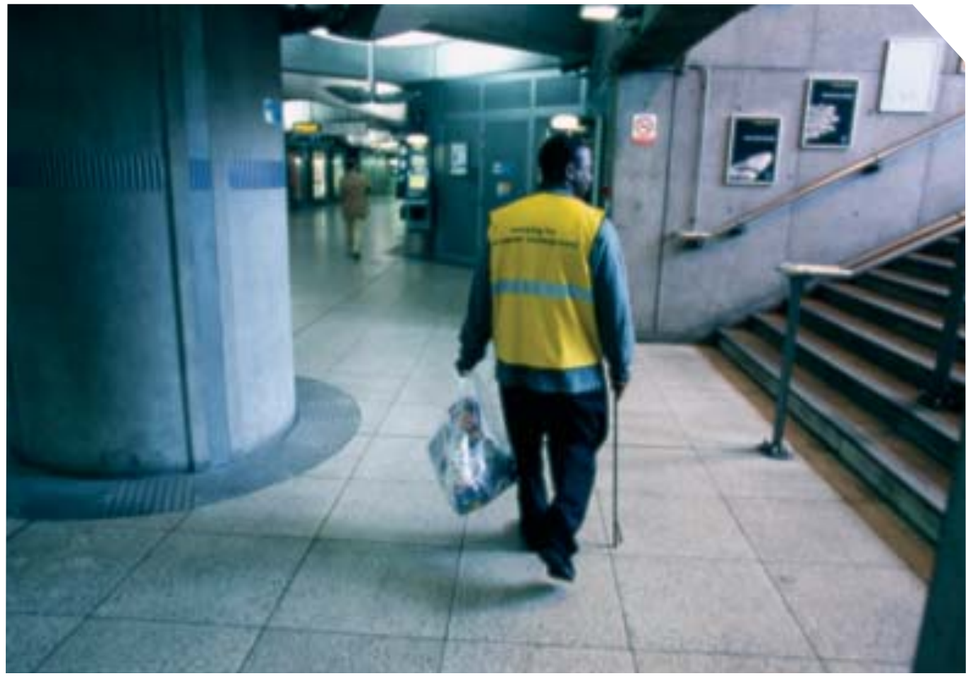
Access

Appearances may be a key element of a welcoming Underground for the majority of Londoners, but for a surprising large minority, welcoming is a matter of basic access. One in seven Londoners describe themselves as physically impaired in some way, and many of them are unable or barely able to use the Underground. In addition, those with luggage and parents with pushchairs struggle in a system whose age, location and physical constraints pose enormous barriers to universal access. At present TfL assesses 43 Tube stations as being step-free in both directions, and 12 in one direction. Under the Underground's previously announced plan, 100 key stations will be step free by 2020 with 18 of them made step free in the next five years.

TfL believes that the promotion of inclusion and equality is a condition of spending the public's money, and each of its modes must work toward universal accessibility. This is a tough engineering and financial challenge for the Underground because the solutions are expensive and some fall outside of the PPP funding. Our ability to accelerate the current schedule for improving accessibility will turn on the availability of continuing Government funding for major station congestion relief projects, such as those proposed for Camden Town and Tottenham Court Road.

The problems of accessibility go far beyond the needs of those who suffer mobility impairment. New lifts will not remove everyone's barrier, and not all solutions involve major expense.

We shall continue to consult to ensure that we present a comprehensive approach to unlocking the Underground. We shall not overlook the low cost, high impact solutions, nor neglect the areas of policy and practices such as staff training, better lighting and choice of colours, and more effective delivery of information.



Signposts for the future

Communication is the means by which we shall accomplish our competing goals of investing for the future while providing service in the present. We intend to maintain a dialogue with all stakeholders, but especially our passengers, on the state of the system, the progress of the investment programme and an explanation for disruptions. If one sets forth a plan that leads to better service.

The public will be more tolerant of temporary inconvenience. Similarly, if accurate, timely and useful information is supplied concurrent with service difficulties, passengers are often more forgiving.

The Government has set forth its goals for the Underground (see table overleaf).

We shall work to provide measures of our progress that will help everyone fairly gauge the state of the Underground. The timetable under the PPP is very long, but with strong management of the contracts, in the best interests of Londoners and Tube users, the returns will become evident in the coming years and will provide London with a new 'oldest metro in the world'.

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Government performance indicators

	Unit of measure	2004/05 budget	2005/06 plan	2006/07 plan	2007/08 plan	2008/09 plan	2009/10 plan	2010/1 plan
Demand targets								
Passenger journeys	Journeys (m)	984.0	1,004.0	1,027.0	1,054.0	1,073.0	1,098.0	1,118.0
Infrastructure performance targets								
PPP availability[1]								
Lost customer hours	Hours (m)	17.22	17.02	16.83	16.61	16.42	16.24	16.24
PPP capability[2]								
Scheduled journey time capability	Minutes	19.63	19.38	19.38	19.38	19.38	19.06	19.06
Overall targets								
Excess journey time (Unweighted)	Minutes	3.27	3.25	3.24	3.24	3.22	3.21	3.21
Excess train journey time (Unweighted)	Minutes	1.97	1.93	1.91	1.90	1.88	1.86	1.84
Service volumes (Kilometres operated)	KM's (m)	68.9	70.5	70.7	70.8	71.1	72.0	73.0
Schedule not operated	%	6.0	5.7	5.5	5.3	5.1	4.8	4.6
London Underground operating company targets								
% Peak train cancellations - due to ONA's	%	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Customer satisfaction (Overall evaluation)	Out of 100	76	77	77	78	78	79	79

Notes:

1. PPP availability
Availability is measured by the number of hours of delay caused to passengers for reasons attributable to Infraco, weighted by the location of the delay and allowing for its length.

2. PPP capability
Capability is a measure of the maximum potential of the assets to provide a fast journey. It is measured by average journey time for a line when the train service is operating according to schedule. The measure is a weighted average, weighted by passenger demand by line.

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Bakerloo line

The Bakerloo line runs for 23 km from Elephant & Castle in the south to Harrow & Wealdstone in the north and is very much a line of two halves.

The core section, south of Queen's Park, runs almost entirely in a tunnel. It was opened in stages between 1906 and 1915, and reflects Victorian/Edwardian planning standards leading to tunnels following the routes of the streets above with all their turns and tight curves.

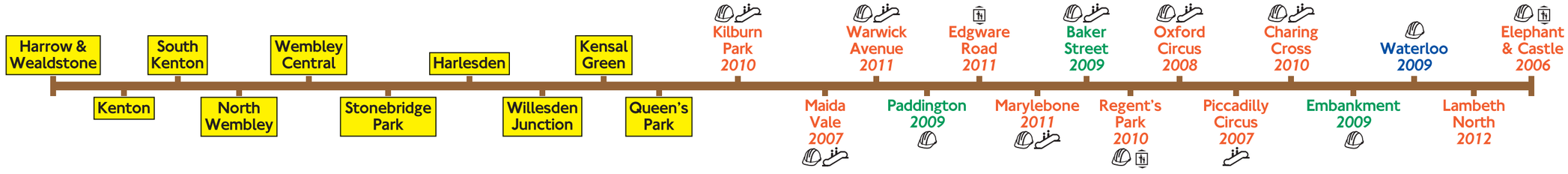
In spite of this peculiar layout, the core section operates fairly reliably, though the tight corners and lack of ventilation shafts can make travelling and working conditions uncomfortable in hot weather.

North of Queen's Park the Bakerloo joins the national rail route from Euston to Watford Junction. Bakerloo line trains inter-work with Silverlink services and serve nine Silverlink stations, with the track itself owned by Network Rail.

This complex arrangement creates considerable operational challenges, and equipment failures north of Queen's Park are less within LU's ability to control. One response is to operate the core section separately, though with the line's main depot being located at Stonebridge Park, it is not completely possible to insulate the service from the effect of problems on the national rail section. The line does benefit from one of the better control systems on the network, with stations having much better information about the position of trains than some other lines. The core section signalling is also in relatively good condition.

The Bakerloo line is not scheduled for a line upgrade until 2020. In the meantime however, Metronet is planning to work on reliability, and has stated it intends to step up train maintenance so that more trains are regularly available for service in the next two years.

Key deliverables at stations served by the Bakerloo line as promised by Metronet Rail BCV



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Jubilee line

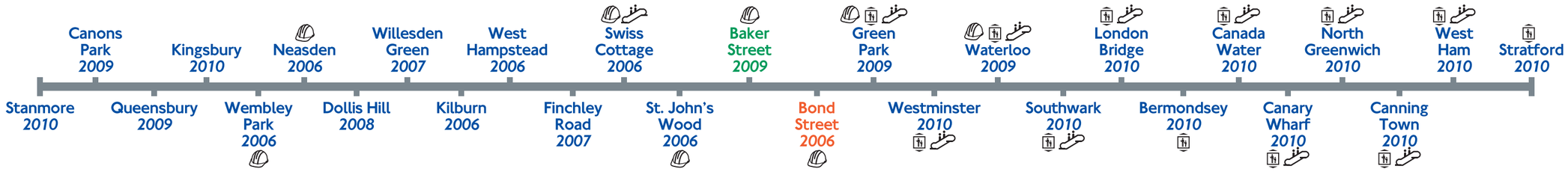
The Jubilee line is the "baby" of the network, having only been inaugurated in 1979 when new tunnels between Baker Street and Charing Cross were combined with the Bakerloo's Stanmore branch to create a new line. The £3.5 billion extension from Green Park to Stratford fully opened in December 1999 and has been applauded for its remarkable engineering feats and spectacular architecture. The extension opened new areas of London to the tube and the 36.2 km line serves 27 stations and is the only line to offer an interchange onto every other Underground line.

The line's early performance failed to match its spectacular appearance with a failed signal system from the start. The line has settled down since then and the reliability of both signalling and trains has improved markedly, but total throughput of trains is far below the design capacity. The line really came of age during the Central line closure, when it handled significantly increased numbers – a demonstration that it can help to handle the massive increase in usage likely to result from the growth of Docklands.

Tube Lines upgrade plans for the line will address the main deficiencies of the line and provide London Underground with the capability to increase service capacity by roughly 45 per cent. This will come from the addition of a seventh car to every train, which Tube Lines recently announced would be completed by 2006, and the complete renewal of signalling, the order for which Tube Lines plans to place this year.

The line upgrade will bring the signalling up to the high standard of some of the other features of the line, such as the ventilation system, which is the best on the network. It will allow unification of the two control centres, which will better enable controllers to manage the service. Tube Lines promises a 15 per cent reduction in asset delays in the first year, and further reliability improvements through the replacement of over 16,000 metres of track and nearly 5,000 metres of drainage over the next seven years. The Mayor's London Plan shows the Jubilee line will become an increasingly important part of London's transport infrastructure over the next two decades, and London Underground will be expecting high delivery from Tube Lines to meet this challenge.

Key deliverables at stations served by the Jubilee line as promised by Tube Lines



Bond Street — Station maintained by Metronet Rail BCV

Baker Street — Station maintained by Metronet Rail SSL

Green Park — Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

TfL Focus On Tube text 3/7/03 9:18 Page 21

Metropolitan line

The Metropolitan line is where the story of the Tube began, with the opening of the world's first underground railway between Paddington and Farringdon in 1863. The next 60 years saw it develop its reach to Chesham in 1889, Aylesbury in 1892, Uxbridge in 1904 and finally Watford in 1925 as the 'Met' pursued its ambitions to be a mainline railway; it even ran a Pullman service for a while. Even today the Metropolitan still retains the feel of a mainline suburban service, with the largest trains on the Underground and charming oddities such as luggage racks and coat hooks.

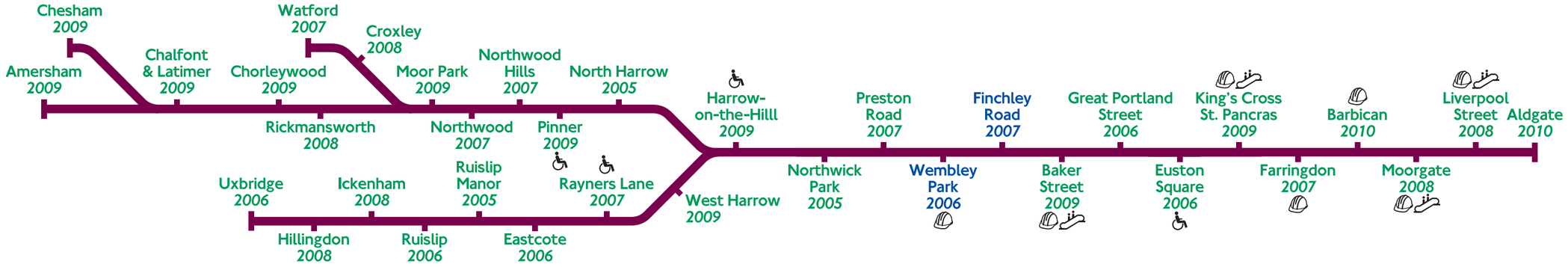
Today, the Metropolitan line runs over 66.7 km from Aldgate, in the heart of the City, deep into the Chilterns to Amersham, with branches to Chesham, Uxbridge and Watford. Although its 52 eight-car trains are 40 years old, they are still going strong and remain reliable. The line infrastructure however, is becoming increasingly less reliable. Regular users can experience something of a roller coaster ride on bumpy track between Baker Street and Wembley Park, and signal failures between Kings Cross and Farringdon are related to the age of the track bed and problems with drainage.

Metronet is proposing to replace over 104,000 metres of track on the sub-surface railway.

A particular bottleneck for the line is the flat junction at Baker Street where the Metropolitan main line merges into the Hammersmith & City/Circle line, so that westbound Metropolitan line trains impede eastbound Circle/City trains, and vice versa. The line also suffers from limitations in its service control, since services between Aldgate and Wembley Park are controlled from Baker Street, while all routes north of there are controlled from local signal cabins, still with traditional interlocking levers. In addition to this, there are complexities associated with sharing track with the Chiltern Line between Harrow-on-the-Hill and Amersham.

Metronet's plans for the Metropolitan line require an immediate start on the designs for 71 new trains which are expected to enter service between 2009 and 2013. A new signalling system is planned, while in the short term, maintenance improvements will assist reliability and operational problems with pinch points.

Key deliverables at stations served by the Metropolitan line as promised by Metronet Rail SSL



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Hammersmith & City line

As with so much of London Underground, the Hammersmith & City owes its existence to the pioneering vision of the Metropolitan Railway, which opened a branch line to Hammersmith in 1864. The service reached Whitechapel twenty years later and took its present form in 1936, when trains began running over District line tracks to Barking.

A line that has no branches ought to be easy to operate, but this is hardly the case.

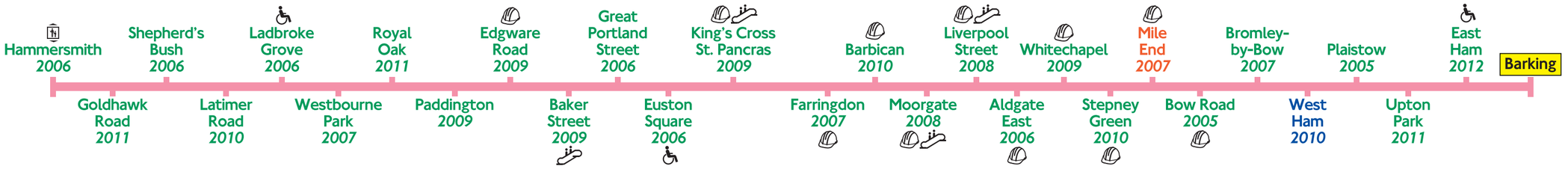
The service suffers from the same hindrances as the Circle line, as it tries to fight its corner against its bigger brothers on the District and Metropolitan lines. Services are controlled by the Metropolitan Line as far as Whitechapel, and the District Line from Whitechapel-Barking. Flat junctions at Baker Street and Edgware Road mean that the potential for delays and conflicts are enormous. However, the Hammersmith & City has one major advantage in serving stations that other lines cannot reach, which means that a service is maintained at the Circle's expense during times of disruption.

The future of the Hammersmith & City line is closely bound to line upgrades on the principal sub-surface lines.

Metronet is promising an average improvement of 30 per cent in asset reliability by 2006, as well as significant improvements resulting from the renewal of 104 km of sub-surface track and 100 sets of points.

In the longer term, Metronet projects that the Hammersmith & City line will take delivery of 40 new trains from 2013 onwards.

Key deliverables at stations served by the Hammersmith & City line as promised by Metronet Rail SSL



Mile End — Station maintained by Metronet Rail BCV

King's Cross St. Pancras — Station maintained by Metronet Rail SSL

West Ham — Station maintained by Tube Lines

Barking — Station owned by Network Rail. Not part of the PPP

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 — Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

TfL Focus On Tube text 3/7/03 9:18 Page 25

Victoria line

The Victoria Line was the first deep-level tube line to be built across central London since the early 20th century. It opened in stages between 1968-1971, linking Walthamstow in north east London with Brixton in south London, providing much needed relief for the Piccadilly line and opening up new areas of London to tube services. The 21km of line is all underground, which means the staff can go a whole shift without seeing daylight!

The line broke the mould as the first in the world to be operated automatically from electronic code within the track. The line suffers from the fact that its original designers underestimated how popular it would become, and a number of stations were reduced in size to cut costs. This is felt particularly at Victoria, but fortunately the lesson was learnt for the building of the Jubilee Line Extension.

The Victoria line has run a generally reliable two minute service for many years, but much of the track, signalling and control systems are starting to show their age.

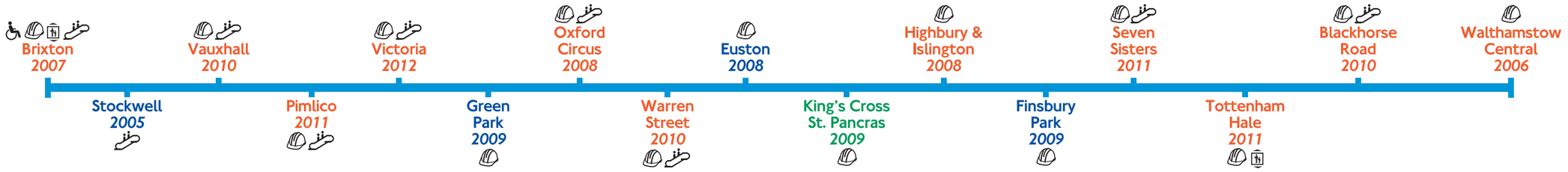
The main challenge for the future will be to get the best out of the line, building on work in recent years such as the complete upgrade of the points at Brixton and station improvements at Tottenham Hale and Brixton.

The Victoria line is a popular and essential service for London, and will be the first major line to benefit from the programme of upgrades planned under the PPP. Metronet has committed to delivering increased track speed through the installation of a new signalling system.

It expects a 20 per cent improvement in reliability and an eight per cent improvement in journey time within three years.

Work will also be starting on the designs for a brand new set of 47 trains that will enter service between 2009-2012.

Key deliverables at stations served by the Victoria line as promised by Metronet Rail BCV



Oxford Circus — Station maintained by Metronet Rail BCV

King's Cross St. Pancras — Station maintained by Metronet Rail SSL

Green Park — Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

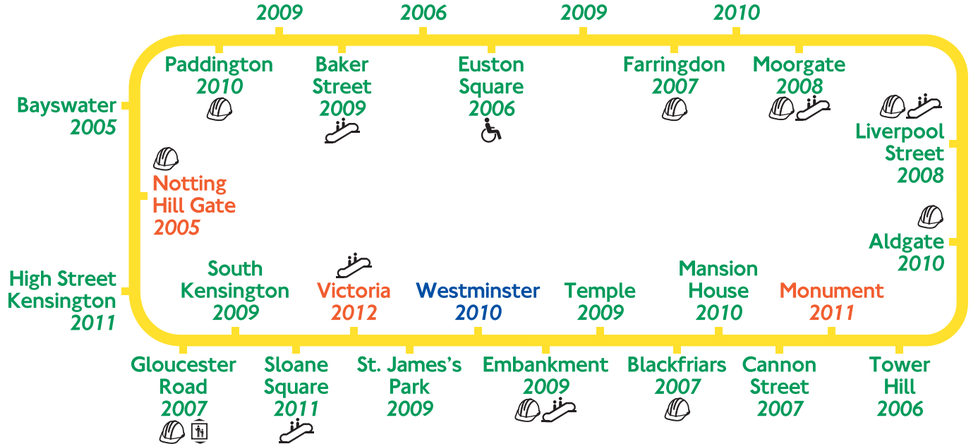
TfL Focus On Tube text 3/7/03 9:18 Page 27

Circle line

The Circle line is undoubtedly one of London's most endearing and yet frustrating features. While all its 27 stations, and the majority of its 22.5 km route are also served by the District, Hammersmith & City and Metropolitan Lines, the Circle serves the function of taking passengers 'around the corners' in places such as Gloucester Road and Tower Hill. The line connects most of London's main line railway termini and its seeming simplicity makes it enduringly popular with tourists.

Even today the line is regarded as the poor relation of the Metropolitan and the District. Circle services are scheduled to operate at eight-minute intervals (every fourth train), slotting between Metropolitan and District services, with neither line having a complete view of the whole Circle. A single circuit of the Circle takes almost an hour but requires trains to traverse no less than five flat junctions, and this is often a cause of delays. The importance of maintaining regular branch services on the District and Metropolitan lines means that Circle line trains are usually the first to be cancelled or held up, particularly as all Circle destinations can be reached by other lines with one interchange at most.

Key deliverables at stations served by the Circle line as promised by Metronet Rail SSL



Notting Hill Gate — Station maintained by Metronet Rail BCV

King's Cross St. Pancras — Station maintained by Metronet Rail BCV

Westminster — Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 — Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

Unfortunately this can lead to the irritating phenomenon of prolonged gaps and then the arrival of several Circle trains in succession.

As elsewhere, Metronet is promising an average improvement of ten per cent in asset reliability on the sub-surface network in the next year, increasing to around 30 per cent by 2006. Significant reliability improvements will result from the renewal of 104 km of sub-surface track and 100 sets of points. Looking further ahead, the Circle and Hammersmith & City lines are scheduled to take delivery of 40 new trains from 2013 onwards.

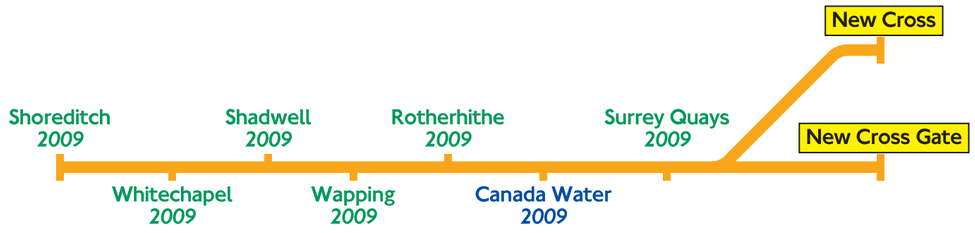
East London line

The eight km East London line is an important, if understated, route connecting nine stations from Shoreditch and Whitechapel in the north with New Cross in the south. While it may not be familiar to many regular Underground users, the plans to extend it have highlighted how crucial it is to the long-term development of East London.

The line is now capable of delivering a six-minute peak service, requiring just six trains, which are four-car units on loan from the Metropolitan line.

The future of the line rests with the project to build extensions to the north (to Dalston and Highbury & Islington) and to the south (connecting with suburban routes to Wimbledon and West Croydon). This project promises to transform the line from something of a backwater to a transport artery in East London. In the meantime, Metronet are committed to maintaining the line.

Key deliverables at stations served by the East London line as promised by Metronet Rail SSL



Shoreditch — Station maintained by Metronet Rail SSL

Canada Water — Station maintained by Tube Lines

New Cross — Station owned by Network Rail. Not part of the PPP

2009 — Year of completion

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Central line

At 74 kms, the Central line offers the longest end to end journey on the Underground and is both a mass transit city centre metro and suburban railway serving the long branches to West Ruislip and Epping.

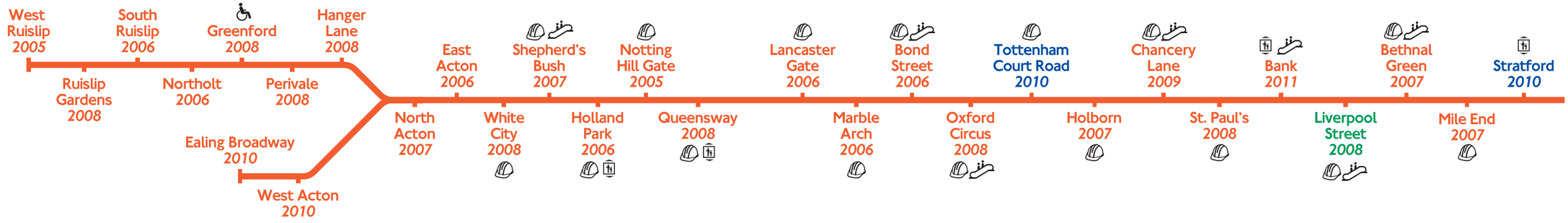
The core section recently celebrated its 100th birthday. Like others from that era, the tunnels of the Central line follow the streets above, and the long, fast, straight section beneath Oxford Street, runs into very tight curves in the city as the tunnels snake around the vaults of the Bank of England. This causes the unpleasant wheel screech that is regularly heard in the area and would be worse were it not for over £1 million of investment in grinding and lubrication in recent years. This section, between Mile End and St Paul's, is one of the most heavily used parts of the network. It is common to see severely crowded trains running in every 90 seconds on the westbound platform at Liverpool Street in the morning peak, but cross to the eastbound platform and the trains can be virtually empty.

The Central line was upgraded during the 1990s, with £870 million invested in a new train fleet, complete resignalling, new control and information systems, and track and power enhancements.

After some early problems the new signalling system has settled in and performs well.

However, the available fleet size is less than ideal and poor train reliability was evident and well publicised even before the Chancery Lane incident, which has raised further questions about the stock design. The task for Metronet will be to turn around train performance to deliver improved reliability, and it has set itself the overall target of improving asset reliability by 15 per cent on the BCV group of lines by 2005. It is also planning initiatives to improve the availability of Central line trains over the next two years. Better maintenance, supported by modifications to enhance performance, will reduce the average journey time by a further 5 per cent by 2006 and allow London Underground to run a far more robust service.

Key deliverables at stations served by the Central line as promised by Metronet Rail BCV



Notting Hill Gate — Station maintained by Metronet Rail BCV

Liverpool Street — Station maintained by Metronet Rail SSL

Tottenham Court Road — Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 — Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

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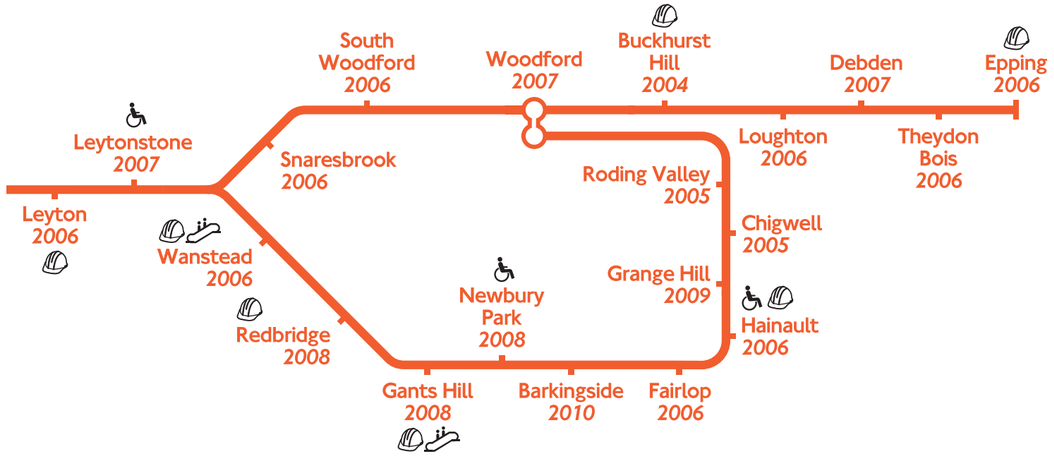

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Northern line

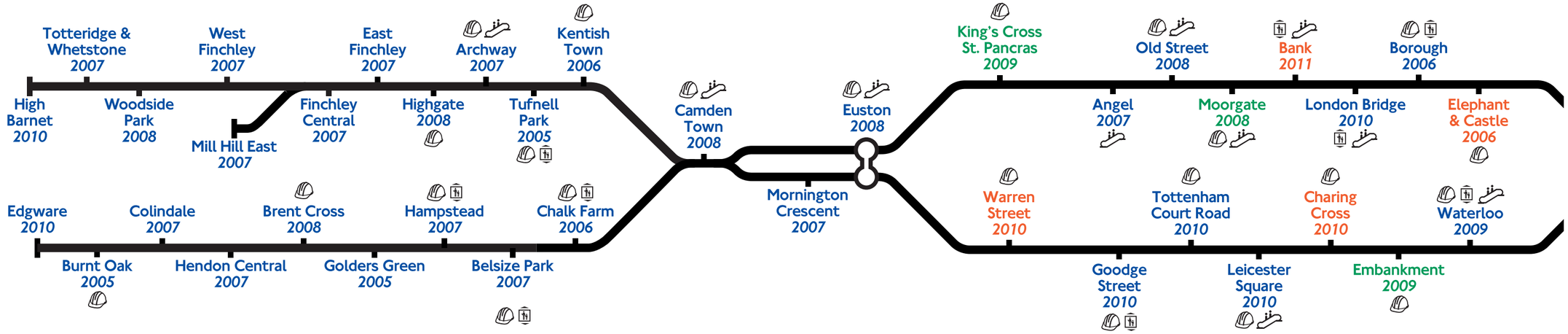
The Northern line is the Tube's main north-south artery serving 50 stations, over 58 km and penetrating further into south London than any other Underground line. The line as we know it today came into existence in the 1920s when two separate tube railways dating from 1890 and 1907 were joined together.

This is the origin of the curious layout of the line, which has a trunk section in the south that splits into two routes through Central London which merge again in a spaghetti like array of flying junctions at Camden Town it splits again into branches serving Edgware and High Barnet/Mill Hill East in the north. No metro builder today would even contemplate such a complex design, and it is perhaps fortunate that the 1930s expansion plans, which would have made the layout even more chaotic, were never completed.

The peculiar arrangement presents some interesting operational challenges. Peak services operate every three minutes on the Edgware and High Barnet/Mill Hill East branches and on to the City and West End routes. This means a total of 40 trains per hour are in service, but south of Kennington the infrastructure is only capable of handling 30 trains per hour (two-minute frequency). An underground loop at Kennington allows some turning of trains, but the loop can only be accessed from the West End branch, causing some annoyance to customers who want to travel on to Morden and have to change.

While split branches provide flexibility in times of disruption, even under perfect conditions, considerable strain is put on the signalling and points at Camden and Morden, and a signal failure at either of these locations can quickly affect the whole line. The signalling system is reaching the end of its life and Tube Lines has promised to place the contracts for replacement signalling this year. Communications and control systems on the line are also deteriorating and need replacement. Tube Lines plans a series of maintenance initiatives in the short term to reduce asset delays by six per cent over the next year, and the upgrade of this complex

Key deliverables at stations served by the Northern line as promised by Tube Lines



Elephant & Castle — Station maintained by Metronet Rail BCV

King's Cross St. Pancras — Station maintained by Metronet Rail SSL

Tottenham Court Road — Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 — Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

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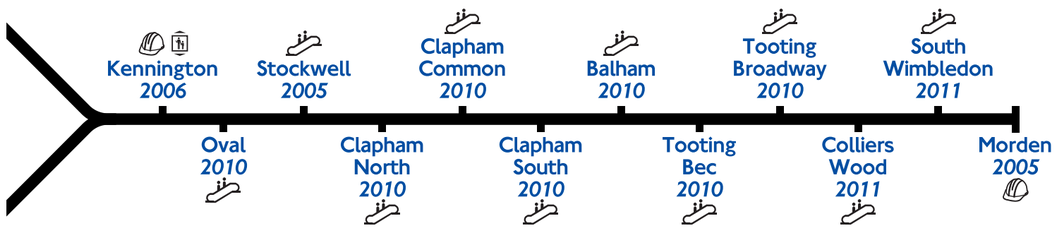
line is due to be fully completed by 2012.

In contrast to the signalling, the train fleet is one of the Northern line's strengths. The 106 new trains entered service between 1995 and 2000 and have performed remarkably well, with reliability targets being reached far more quickly than had been expected.

It is the performance of these trains that has finally shaken the 'misery line' tag from the Northern line, and resignalling will enable the trains to be used to their full potential.



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District line

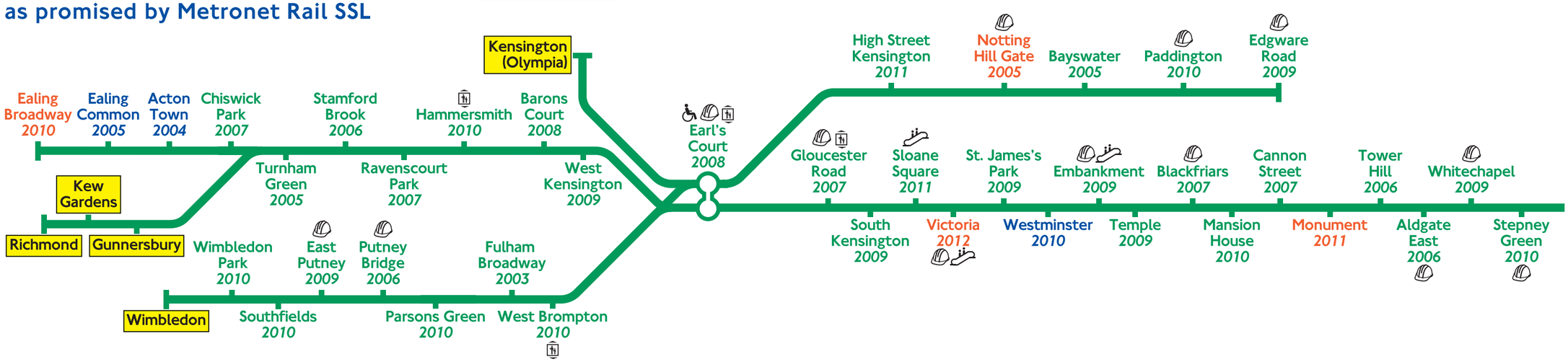
The District line threads its way through the rich and varied aspects of London life. From the leafy suburbs of the west, it works its way through Westminster and along the Thames, before reaching the heart of the East End and beyond to the borders of Essex. The District was the great rival of the Metropolitan Railway, and the line from South Kensington to Westminster opened in 1868, just five years after the inaugural Metropolitan service. In just 20 years, the line had been extended to Whitechapel, and was serving branches to Richmond, Ealing Broadway and Wimbledon. The present eastern terminus at Upminster was reached in 1902.

The District today serves 60 stations over a total route of 64 km, though for a surprisingly high proportion of this distance, the District's rails are used by other lines including the Circle throughout the busy central area, the Hammersmith & City from Aldgate East to Barking, the Piccadilly through Acton Town station, and national rail services on the Richmond (and sometimes Wimbledon) branch.

On the District itself, through services are inter-worked with the Wimbledon – Edgware Road service and stub to Olympia. The hub for all these services is 'the Crewe of the District line', Earl's Court, which safely handles up to 64 train movements an hour through a complex web of flat and flying junctions, from a control room so dated that spare parts had to be sourced from a museum.

Another unique feature of the District line is that it is the only Underground line to operate two different types of train, with the Edgware Road service being provided by Circle line stock because of short platforms. The core service is provided by the fleet of 'D stock' trains. These are now 25 years old and the only trains to retain the unpainted finish, but in spite of their appearance they are among the most reliable trains on the network. A major refurbishment project is about to begin during which the fleet will be brought up to the standards of the Northern line fleet. Metronet has promised to have 13 refurbished trains in service within two years,

Key deliverables at stations served by the District line as promised by Metronet Rail SSL



Ealing Broadway — Station maintained by Metronet Rail BCV

Turnham Green — Station maintained by Metronet Rail SSL

Ealing Common — Station maintained by Tube Lines

Kew Gardens — Station owned by Network Rail. Not part of the PPP

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 — Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

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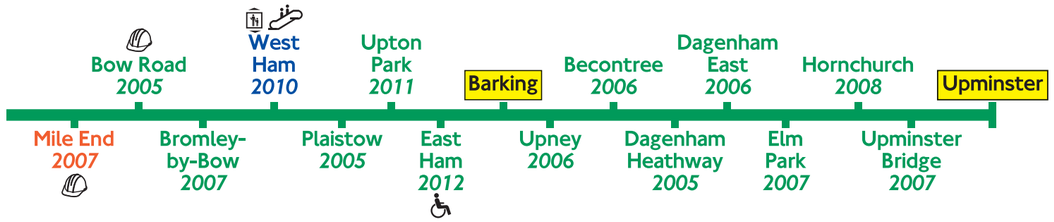
and 34 within three years. Looking further ahead, there is the prospect of an entirely new set of 78 trains to be delivered between 2013-2016.

For all its quirks, the District line has run a very reliable service for many years, but the age of the infrastructure will be increasingly felt over the coming years. Metronet promises to tackle these problems by delivering a complete upgrade of the signalling and control systems, as well as the possibility of automatic train operation. Replacement of track and point work will also contribute to Metronet's stated target of a 30 per cent improvement in asset reliability over the sub-surface railway in three years.



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Piccadilly line

The Piccadilly line is yet another to achieve a 'world's first' – in this case, the first metro line to serve a major international airport when the extension to Heathrow opened in 1977, with a further extension to Terminal 4 via 'the loop' in 1986. The first section of the line opened some 80 years earlier and it subsequently took over the District line routes to Rayners Lane and Hounslow.

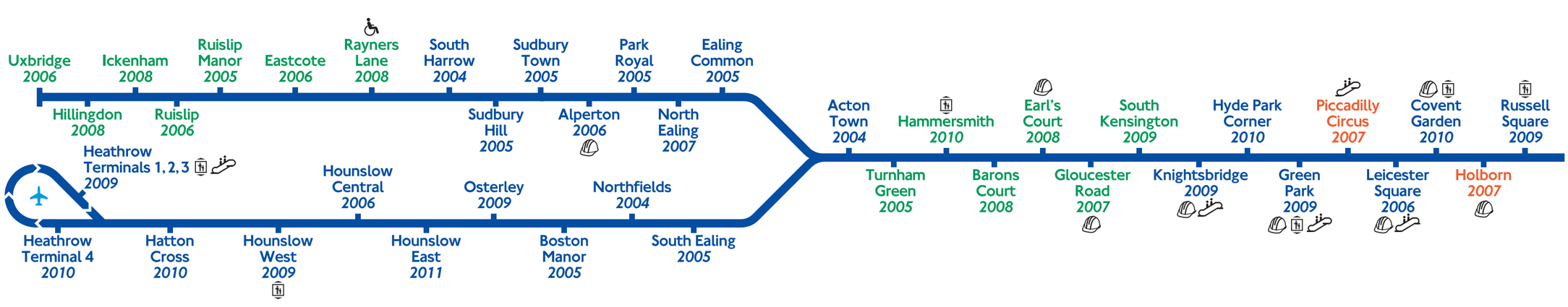
The line now serves 52 stations over 71 km. The stubby, lightly used, Aldwych branch closed in 1994 and Aldwych now enjoys far more success as a training facility and film studio than it ever did as a working station!

The airport service has grown in popularity over the years, and is even reflected in the train design, which makes special allowance for luggage. So important is the airport service as an affordable means of reaching Heathrow that an extension of the line was a specific condition of permission to build the new Terminal 5, and the extension is due to open in 2008.

Performance on the Piccadilly line has improved significantly since service patterns were revised to be more workable. A four-year project to completely refurbish the 87 trains was completed in 2001, and the fleet now boasts facilities such as audio and visual information displays, and customer emergency alarms allowing communication with the train operator. Under the bonnet however, the trains are less impressive and fleet failures have been a particular cause of unreliability.

Reliability requires very careful management on the Piccadilly. Unlike others, the line has no reversing or siding capacity in the central area. This means troublesome trains cannot simply be tucked out of the way in the peaks. Capacity is limited by the signalling, some of which was designed in the 1920s, and particular pinch points such as Acton Town, where Piccadilly and District lines share the same tracks to serve the station. The District and Piccadilly also share a control room – a truly ancient facility near Earls Court, where reportedly the most modern piece of signalling equipment is a display screen for the east

Key deliverables at stations served by the Piccadilly line as promised by Tube Lines



Piccadilly Circus — Station maintained by Metronet Rail BCV

Rayners Lane — Station maintained by Metronet Rail SSL

Leicester Square — Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

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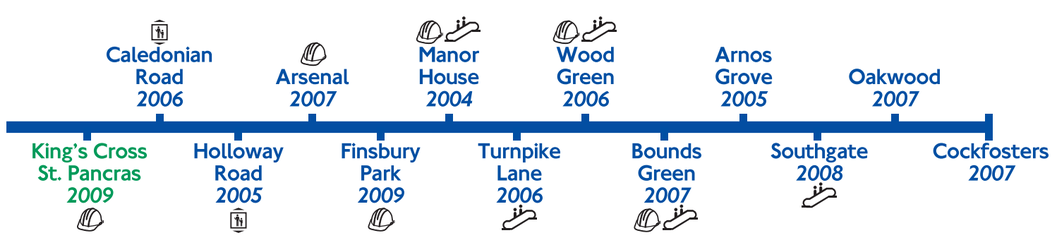
end of the line that came as a hand-me-down from the New York Metro in the 1970s!

The state of the line is a good example of the decades of under-investment on the Underground, and consequently it will take a number of years to upgrade the line to meet 21st century needs. The upgrade will involve the replacement of 27,000 metres of track, complete resignalling, a new control facility, and a brand new fleet of 93 new trains. The design and then construction will take over a decade and the line will not be fully upgraded until 2014. In the meantime, therefore, the immediate priority is 15 per cent improvement in asset reliability over the next year, as promised by Tube Lines.



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Waterloo & City line

Although the 2.4 km deep tunnel twisting from Waterloo to Bank was opened in 1898, for much of its life the Waterloo & City line has been owned and operated by national rail companies, and was only adopted into the Underground family in 1994.

The Waterloo & City, or 'Drain' as it is (not always) affectionately known, is quite different from the rest of the Underground network and is in fact physically separate – which means trains must be taken out by crane for major overhauls. The line operates a simple service pattern with trains running between the two stations on the line, but the flip side to this simplicity is that when problems occur, it often means the whole line has to be suspended causing considerable irritation for customers.

The line has a total fleet of five trains, four of which are required for a peak service allowing a spare for maintenance. The trains were purchased in 1992 as a run on from the Central line order and are identical apart from some signalling related equipment and the distinctive blue doors which reflect the line's national rail heritage. Unfortunately the trains have never been as reliable as was originally hoped and this is a major cause of disruptions on the line. However, Metronet, which maintains the line under PPP, is planning a package of works to reduce train failures to the point that it hopes to be able to have all five trains available for use in the peaks in 2007. These improvements, together with a new signalling system, will reduce travel times, platform waiting, and crowding by providing an 18 per cent increase in capacity in the peak.

Key deliverables at stations served by the Waterloo & City line as promised by Metronet Rail BCV

Bank Station maintained by Metronet Rail BCV

Waterloo Station maintained by Tube Lines

Station Modernisation

Lift Modernisation

Escalator Modernisation

Station Accessibility Projects

2005 Year of completion

Where no pictogram is shown the station will be refurbished by the end of the year indicated

Biographies

Tim O'Toole

Tim O'Toole is the new Managing Director of London Underground. Prior to this appointment he was President and Chief Executive of one of the most successful rail networks in the United States, Consolidated Rail Corporation. Having worked at Consolidated Rail Corporation for 18 years, Tim led the company to its safest and most profitable year in 1998 and was part of the negotiating team for its $10bn merger with Norfolk Southern and CSX.

After attaining a post-graduate Law Degree, Tim rose through the senior legal and financial ranks within Consolidated Rail as General Counsel, Treasurer and Chief Financial Officer, before becoming CEO.

With such legal, financial and management experience at the top level, Tim is the ideal person to manage the complex PPP contracts and lead London Underground's new management team in the new era.

Mike Brown, Chief Operating Officer

As well as being a member of London Underground's Board, Mike has been working in various management roles for the Underground for over a decade. His most recent role was as Director of Customer Services (Stations).

Before joining London Underground 14 years ago, Mike worked as a marketing brand manager for Ranks Hovis McDougall where he was responsible for brands such as Hovis and Mothers Pride.

In 1993, Mike was promoted to Business Manager on the Metropolitan Line where he was responsible for all of the 32 stations. In 1996, he was appointed to the new role of Train Service Delivery Manager for the Metropolitan, Hammersmith and Circle lines. In February 1997, he was appointed to the role of General Manager on the Metropolitan and Circle lines and then in 1999 assumed responsibility for running the train service on the Jubilee, Northern and Piccadilly lines.

As Chief Operating Officer, Mike will be responsible for all aspects of the day-to-day running of the Tube, including customer services, train and stations operations, marketing and planning, communications and information services.

Bob Janowski, Chief Programme Officer

Bob was previously employed by engineers Parsons Brinckerhoff, and has been working at TfL for some months developing methods to monitor the progress of both capital projects and maintenance works to meet the performance outputs set out in the PPP contracts.

Prior to his work on the PPP, Bob was the Implementation Manager and the Head of the Programme Management Office for Railtrack's West Coast Route Modernisation for two and a half years. He has also been President and CEO of PB-KBB, a U.S company which designs and operates underground storage facilities for oil, natural gas, and other substances.

As the Director of Projects for PB's infrastructure company, Bob oversaw the operations of more than 1,700 projects with $350 million in annual revenue, and personally reviewed and approved all design/build contracting activities.

Bob's experience encompasses more than 100 projects, including the Superconducting Super Collider near Dallas for the US Department of Energy, for which he managed the design of more than $300 million in underground construction to within five per cent of the owner's construction cost estimate. In this role, Bob will be responsible for managing LU's interfaces with PPP Infracos, Metronet (SSL and BCV) and Tube Lines (JNP) and other PFI contracts.